IN THE CLAIMS:

Please cancel claims 1, 4, 5, 7, 9, 10, 13 to 16, 18, 20, 21, 23 to 28, 30, 32, 33, 35 and 36 without prejudice or disclaimer.

Please amend the remaining claims as follows:

---

6.   (once amended; rewritten as an independent claim including all the recitations of claims 1 and 5)   A system for controlling a manufacturing production line using a virtual kanban system and a manufacturing execution system comprising:

said manufacturing execution system for automatically controlling routing of product lots and production inputs in said manufacturing production line based on a production scheduling model, wherein feedback data from said production line is provided to said manufacturing execution system;

a database for storing said model and said feedback data, wherein said feedback data is used to provide values for variables of said model; and

a simulating system for simulating operation of said production line according to said model, said simulating system using said feedback data from said database in performing said simulation, said simulating system further

2

comprising a user interface through which changes to said model can be made;

wherein said manufacturing execution system monitors consumption of said production inputs and orders additional production inputs using electronic kanbans which are cycled in response to said feedback data;

wherein said feedback data is divided into two sets of data received by said manufacturing execution system in separate transmissions of said feedback data;

wherein a first of said two sets of data comprises data specifying a type of equipment in said production line;

wherein a second of said two sets of data comprises data specifying an operating status of said equipment, status of said product lots and status of said production inputs; and

[The system of claim 5,]

wherein said manufacturing execution system rechecks a routing schedule for said production inputs and said product lots each time a transmission of said second set of feedback data is received.

8.   (once amended; rewritten as an independent claim including all the recitations of claims 1, 5 and 7)   A system for controlling a manufacturing production line using

a virtual kanban system and a manufacturing execution system comprising:

said manufacturing execution system for automatically controlling routing of product lots and production inputs in said manufacturing production line based on a production scheduling model, wherein feedback data from said production line is provided to said manufacturing execution system;

a database for storing said model and said feedback data, wherein said feedback data is used to provide values for variables of said model; and

a simulating system for simulating operation of said production line according to said model, said simulating system using said feedback data from said database in performing said simulation, said simulating system further comprising a user interface through which changes to said model can be made;

wherein said manufacturing execution system monitors consumption of said production inputs and orders additional production inputs using electronic kanbans which are cycled in response to said feedback data;

wherein said feedback data is divided into two sets of data received by said manufacturing execution system in separate transmissions of said feedback data;

4

wherein a first of said two sets of data comprises data specifying a type of equipment in said production line;

wherein a second of said two sets of data comprises data specifying an operating status of said equipment, status of said product lots and status of said production inputs;

wherein said manufacturing execution system determines a capacity of said equipment in said production line based on said first set of feedback data and generates routes for said product lots in accordance therewith; and   [The system of claim 7,]

wherein said manufacturing execution system scans generated routes for equipment in said production line without a determined capacity to determine potential problem areas in said generated routes.

11. (once amended; rewritten as an independent claim including all the recitations of claims 1 and 10)   A system for controlling a manufacturing production line using a virtual kanban system and a manufacturing execution system comprising:

said manufacturing execution system for automatically controlling routing of product lots and production inputs in said manufacturing production line based on a production

scheduling model, wherein feedback data from said production line is provided to said manufacturing execution system;

a database for storing said model and said feedback data, wherein said feedback data is used to provide values for variables of said model; and

a simulating system for simulating operation of said production line according to said model, said simulating system using said feedback data from said database in performing said simulation, said simulating system further comprising a user interface through which changes to said model can be made;

wherein said manufacturing execution system monitors consumption of said production inputs and orders additional production inputs using electronic kanbans which are cycled in response to said feedback data;

wherein said manufacturing execution system generates a kanban parameter for each piece of said equipment in said production line which uses a production input; and [The system of claim 10,]

wherein said manufacturing execution system generates proposed kanban stages within said production line defined in accordance with said kanban parameters.

17. (once amended; rewritten as an independent claim including all the recitations of claims 14 and 16) A system for controlling a manufacturing production line using a virtual kanban system and a manufacturing execution control means comprising:

said manufacturing execution control means for automatically controlling routing of product lots and production inputs in said manufacturing production line based on a production scheduling model, wherein feedback data from said production line is provided to said manufacturing execution control means;

database means for storing said model and said feedback data, wherein said feedback data is used to provide values for variables of said model; and

simulating means for simulating operation of said production line according to said model, said simulating means using said feedback data from said database means in performing said simulation, said simulating means further comprising a user interface means through which changes to said model can be made;

wherein said manufacturing execution control means monitor consumption of said production inputs and order

additional production inputs using electronic kanbans which
are cycled in response to said feedback data;

wherein said feedback data is divided into two sets of
data received by said manufacturing execution control means
in separate transmissions of said feedback data;

wherein a first of said two sets of data comprises data
specifying a type of equipment in said production line;

wherein a second of said two sets of data comprises data
specifying an operating status of said equipment, status of
said product lots and status of said production inputs; and
[The system of claim 16,]

wherein said manufacturing execution control means
rechecks a routing schedule for said production inputs and
said product lots each time a transmission of said second set
of feedback data is received.

19.   (once amended; rewritten as an independent claim
including all the recitations of claims 14, 16 and 18)   A
system for controlling a manufacturing production line using
a virtual kanban system and a manufacturing execution control
means comprising:

said manufacturing execution control means for
automatically controlling routing of product lots and

8

production inputs in said manufacturing production line based
on a production scheduling model, wherein feedback data from
said production line is provided to said manufacturing
execution control means;

database means for storing said model and said feedback
data, wherein said feedback data is used to provide values
for variables of said model; and

simulating means for simulating operation of said
production line according to said model, said simulating
means using said feedback data from said database means in
performing said simulation, said simulating means further
comprising a user interface means through which changes to
said model can be made;

wherein said manufacturing execution control means
monitor consumption of said production inputs and order
additional production inputs using electronic kanbans which
are cycled in response to said feedback data;

wherein said feedback data is divided into two sets of
data received by said manufacturing execution control means
in separate transmissions of said feedback data;

wherein a first of said two sets of data comprises data
specifying a type of equipment in said production line;

wherein a second of said two sets of data comprises data

specifying an operating status of said equipment, status of

said product lots and status of said production inputs;

wherein said manufacturing execution control means

determines a capacity of said equipment in said production

line based on said first set of feedback data and generates

routes for said product lots in accordance therewith; and

[The system of claim 18,]

wherein said manufacturing execution control means scans

generated routes for equipment in said production line

without a determined capacity to determine potential problem

areas in said generated routes.

22.   (once amended; rewritten as an independent claim

including all the recitations of claims 14 and 21)   A system

for controlling a manufacturing production line using a

virtual kanban system and a manufacturing execution control

means comprising:

said manufacturing execution control means for

automatically controlling routing of product lots and

production inputs in said manufacturing production line based

on a production scheduling model, wherein feedback data from

said production line is provided to said manufacturing execution control means;

database means for storing said model and said feedback data, wherein said feedback data is used to provide values for variables of said model; and

simulating means for simulating operation of said production line according to said model, said simulating means using said feedback data from said database means in performing said simulation, said simulating means further comprising a user interface means through which changes to said model can be made;

wherein said manufacturing execution control means monitor consumption of said production inputs and order additional production inputs using electronic kanbans which are cycled in response to said feedback data; and [The system of claim 21,]

wherein said manufacturing execution control means generate proposed kanban stages within said production line defined in accordance with said kanban parameters.

29. (once amended; rewritten as an independent claim including all the recitations of claims 25 and 28) A method

for controlling a manufacturing production line using a

virtual kanban system, the method comprising:

automatically controlling routing of product lots and

production inputs in said manufacturing production line with

a manufacturing execution system using a production

scheduling model, wherein feedback data from said production

line is provided to said manufacturing execution system;

storing said model and said feedback data in a database,

wherein said feedback data is used to provide values for

variables of said model;

simulating operation of said production line according to

said model with a simulating system, said simulating system

using said feedback data from said database in performing

said simulation;

monitoring consumption of said production inputs with

said manufacturing execution system and ordering additional

production inputs using electronic kanbans which are cycled

in response to said feedback data;

dividing said feedback data into two sets of data; and

transmitting said two sets of data to said manufacturing

execution system in separate transmissions;

wherein a first of said two sets of data comprises data

specifying a type of equipment in said production line;

wherein a second of said two sets of data comprises data

specifying an operating status of said equipment, status of

said product lots and status of said production inputs; and

[The method of claim 28, further comprising]

wherein said method further comprises rechecking a

routing schedule for said production inputs and said product

lots each time a transmission of said second set of feedback

data is received.

31. (once amended; rewritten as an independent claim

including all the recitations of claims 25, 28 and 30)   A

method for controlling a manufacturing/production line using

a virtual kanban system, the method comprising:

automatically controlling routing of product lots and

production inputs in said manufacturing production line with

a manufacturing execution system using a production

scheduling model, wherein feedback data from said production

line is provided to said manufacturing execution system;

storing said model and said feedback data in a database,

wherein said feedback data is used to provide values for

variables of said model;

simulating operation of said production line according to

said model with a simulating system, said simulating system

using said feedback data from said database in performing
said simulation;

monitoring consumption of said production inputs with
said manufacturing execution system and ordering additional
production inputs using electronic kanbans which are cycled
in response to said feedback data;

dividing said feedback data into two sets of data; and

transmitting said two sets of data to said manufacturing
execution system in separate transmissions;

wherein a first of said two sets of data comprises data
specifying a type of equipment in said production line;

wherein a second of said two sets of data comprises data
specifying an operating status of said equipment, status of
said product lots and status of said production inputs; and

wherein said method further comprises determining a
capacity of said equipment in said production line based on
said first set of feedback data and generating routes for
said product lots in accordance therewith; and [The method of
claim 30, further comprising] scanning generated routes for
equipment in said production line without a determined
capacity to determine potential problem areas in said
generated routes.

34. (once amended; rewritten as an independent claim including all the recitations of claims 25 and 33) A method for controlling a manufacturing production line using a virtual kanban system, the method comprising:

automatically controlling routing of product lots and production inputs in said manufacturing production line with a manufacturing execution system using a production scheduling model, wherein feedback data from said production line is provided to said manufacturing execution system;

storing said model and said feedback data in a database, wherein said feedback data is used to provide values for variables of said model;

simulating operation of said production line according to said model with a simulating system, said simulating system using said feedback data from said database in performing said simulation;

monitoring consumption of said production inputs with said manufacturing execution system and ordering additional production inputs using electronic kanbans which are cycled in response to said feedback data;

generating a kanban parameter with said manufacturing execution system for each piece of equipment in said production line which uses a production input; and